

## CLAIMS

1. A purified nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and sequences  
5 complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

2. A purified nucleic acid comprising at least 10 consecutive nucleotides of a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID  
10 NOs: 8178-36681 and sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

3. A purified nucleic acid comprising at least 15 consecutive nucleotides of a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID  
15 NOs: 8178-36681 and sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

4. A purified nucleic acid comprising the coding sequence of a sequence selected from the group consisting of SEQ ID NOs: 24-4100.

5. A purified nucleic acid comprising the full coding sequences of a sequence selected from the group consisting of SEQ ID NOs: 3721-3811 wherein the full coding sequence comprises the sequence encoding the signal peptide and the sequence encoding the mature protein.

6. A purified nucleic acid comprising a contiguous span of a sequence selected from the group consisting of SEQ ID NOs: 3721-3811 which encodes the mature protein.

7. A purified nucleic acid comprising a contiguous span of a sequence selected from the group consisting of SEQ ID NOs: 24-652 and 3721-3811 which encode the signal peptide.

8. A purified nucleic acid encoding a polypeptide comprising a sequence selected from the group consisting of the sequences of SEQ ID NOs: 4101-8177.

9. A purified nucleic acid encoding a polypeptide comprising a sequence selected from the group consisting of the sequences of SEQ ID NOs: 7798-7888.

10. A purified nucleic acid encoding a polypeptide comprising a mature protein included in a sequence selected from the group consisting of the sequences of SEQ ID NOs: 7798-7888.

11. A purified nucleic acid encoding a polypeptide comprising a signal peptide included in a sequence selected from the group consisting of the sequences of SEQ ID NOs: 4101-4729 and 7798-7888.

12. A purified nucleic acid at least 15 nucleotides in length which hybridizes under stringent conditions to a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

13. A purified or isolated polypeptide comprising a sequence selected from the group consisting of the sequences of SEQ ID NOs: 4101-8177.

14. A purified or isolated polypeptide comprising a sequence selected from the group consisting of SEQ ID NOs: 7798-7888.

15. A purified or isolated polypeptide comprising a mature protein of a polypeptide selected from the group consisting of SEQ ID NOs: 7798-7888.

16. A purified or isolated polypeptide comprising a signal peptide of a sequence selected from the group consisting of the polypeptides of SEQ ID NOs: 4101-4729 and 7798-7888.

17. A purified or isolated polypeptide comprising at least 10 consecutive amino acids of a sequence selected from the group consisting of the sequences of SEQ ID NOs: 4101-8177.

18. A method of making a cDNA comprising the steps of:  
contacting a collection of mRNA molecules from human cells with a  
primer comprising at least 15 consecutive nucleotides of a sequence selected  
from the group consisting of the sequences complementary to SEQ ID NOs: 24-  
4100 and SEQ ID NOs: 8178-36681;  
hybridizing said primer to an mRNA in said collection that encodes said  
protein;  
reverse transcribing said hybridized primer to make a first cDNA strand  
from said mRNA;  
making a second cDNA strand complementary to said first cDNA strand;  
and  
isolating the resulting cDNA encoding said protein comprising said first  
cDNA strand and said second cDNA strand.
19. A purified cDNA obtainable by the method of Claim 18.
20. The cDNA of Claim 19 wherein said cDNA encodes at least a portion of  
a human polypeptide.
21. A method of making a cDNA comprising the steps of:  
obtaining a cDNA comprising a sequence selected from the group  
consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681;  
contacting said cDNA with a detectable probe comprising at least 15  
consecutive nucleotides of a sequence selected from the group consisting of  
SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and the sequences  
complementary to SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 under  
conditions which permit said probe to hybridize to said cDNA;  
identifying a cDNA which hybridizes to said detectable probe; and  
isolating said cDNA which hybridizes to said probe.
22. A purified cDNA obtainable by the method of Claim 21.

23. The cDNA of Claim 22 wherein said cDNA encodes at least a portion of a human polypeptide.

24. A method of making a cDNA comprising the steps of:

5 contacting a collection of mRNA molecules from human cells with a first primer capable of hybridizing to the polyA tail of said mRNA;

hybridizing said first primer to said polyA tail;

reverse transcribing said mRNA to make a first cDNA strand;

10 making a second cDNA strand complementary to said first cDNA strand using at least one primer comprising at least 15 consecutive nucleotides of a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681; and

isolating the resulting cDNA comprising said first cDNA strand and said second cDNA strand.

15 25. A purified cDNA obtainable by the method of Claim 24.

26. The cDNA of Claim 25 wherein said cDNA encodes at least a portion of a human polypeptide.

20 27. The method of Claim 24, wherein the second cDNA strand is made by: contacting said first cDNA strand with a first pair of primers, said first pair of primers comprising a second primer comprising at least 15 consecutive nucleotides of a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and a third primer having a sequence therein which is included within the sequence of said first primer;

25 performing a first polymerase chain reaction with said first pair of primers to generate a first PCR product;

30 contacting said first PCR product with a second pair of primers, said second pair of primers comprising a fourth primer, said fourth primer comprising at least 15 consecutive nucleotides of said sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681,

and a fifth primer, wherein said fourth and fifth hybridize to sequences within said first PCR product; and

performing a second polymerase chain reaction, thereby generating a second PCR product.

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28. A purified cDNA obtainable by the method of Claim 27.

29. The cDNA of Claim 28 wherein said cDNA encodes at least a portion of a human polypeptide.

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30. The method of Claim 24 wherein the second cDNA strand is made by: contacting said first cDNA strand with a second primer comprising at least 15 consecutive nucleotides of a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681; hybridizing said second primer to said first strand cDNA; and extending said hybridized second primer to generate said second cDNA strand.

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31. A purified cDNA obtainable by the method of Claim 30.

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32. The cDNA of Claim 28, wherein said cDNA encodes at least a portion of a human polypeptide.

33. A method of making a polypeptide comprising the steps of:

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obtaining a cDNA which encodes a polypeptide encoded by a nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOs: 24-4100 or a cDNA which encodes a polypeptide comprising at least 10 consecutive amino acids of a polypeptide encoded by a sequence selected from the group consisting of SEQ ID NOs: 24-4100;

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inserting said cDNA in an expression vector such that said cDNA is operably linked to a promoter;

introducing said expression vector into a host cell whereby said host cell produces the protein encoded by said cDNA; and

isolating said protein.

34. An isolated protein obtainable by the method of Claim 33.

5 35. A method of obtaining a promoter DNA comprising the steps of:  
obtaining genomic DNA located upstream of a nucleic acid comprising a  
sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ  
ID NOs: 8178-36681 and the sequences complementary to the sequences of  
SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681;

10 screening said genomic DNA to identify a promoter capable of directing  
transcription initiation; and  
isolating said DNA comprising said identified promoter.

15 36. The method of Claim 35, wherein said obtaining step comprises walking  
from genomic DNA comprising a sequence selected from the group consisting of SEQ  
ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and the sequences complementary to  
SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

20 37. The method of Claim 36, wherein said screening step comprises  
inserting genomic DNA located upstream of a sequence selected from the group  
consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and the sequences  
complementary to SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 into a  
promoter reporter vector.

25 38. The method of Claim 36, wherein said screening step comprises  
identifying motifs in genomic DNA located upstream of a sequence selected from the  
group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and the  
sequences complementary to SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681  
which are transcription factor binding sites or transcription start sites.

30 39. An isolated promoter obtainable by the method of Claim 34.

40. In an array of discrete ESTs or fragments thereof of at least 15  
nucleotides in length, the improvement comprising inclusion in said array of at least one

sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681, the sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and fragments comprising at least 15 consecutive nucleotides of said sequence.

5           41.    The array of Claim 40 including therein at least two sequences selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681, the sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681, and fragments comprising at least 15 consecutive nucleotides of said  
10   sequences.

          42.    The array of Claim 40 including therein at least five sequences selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681, the sequences complementary to the sequences of SEQ ID NOs: 24-4100 and SEQ ID NOs:  
15   8178-36681 and fragments comprising at least 15 consecutive nucleotides of said sequences.

          43.    An enriched population of recombinant nucleic acids, said recombinant nucleic acids comprising an insert nucleic acid and a backbone nucleic acid, wherein at  
20   least 5% of said insert nucleic acids in said population comprise a sequence selected from the group consisting of SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681 and the sequences complementary to SEQ ID NOs: 24-4100 and SEQ ID NOs: 8178-36681.

          44.    A purified or isolated antibody capable of specifically binding to a  
25   polypeptide comprising a sequence selected from the group consisting of SEQ ID NOs: 4101-8177.

          45.    A purified or isolated antibody capable of specifically binding to a  
30   polypeptide comprising at least 10 consecutive amino acids of a sequence selected from the group consisting of SEQ ID NOs: 4101-8177.

          46.    An antibody composition capable of selectively binding to an epitope-containing fragment of a polypeptide comprising a contiguous span of at least 8 amino

acids of any of SEQ ID NOs: 4101-8177, wherein said antibody is polyclonal or monoclonal.

47. A computer readable medium having stored thereon a sequence selected from the group consisting of a nucleic acid code of SEQ ID NOs: 24-4100 and 8178-36681 and a polypeptide code of SEQ ID NOs: 4101-8177.

48. A computer system comprising a processor and a data storage device wherein said data storage device has stored thereon a sequence selected from the group consisting of a nucleic acid code of SEQ ID NOs: 24-4100 and 8178-36681 and a polypeptide code of SEQ ID NOs: 4101-8177.

49. The computer system of Claim 48 further comprising a sequence comparer and a data storage device having reference sequences stored thereon.

50. The computer system of Claim 49 wherein said sequence comparer comprises a computer program which indicates polymorphisms.

51. The computer system of Claim 48 further comprising an identifier which identifies features in said sequence.

52. A method for comparing a first sequence to a reference sequence wherein said first sequence is selected from the group consisting of a nucleic acid code of SEQ ID NOs: 24-4100 and 8178-36681 and a polypeptide code of SEQ ID NOs: 4101-8177 comprising the steps of:

reading said first sequence and said reference sequence through use of a computer program which compares sequences; and

determining differences between said first sequence and said reference sequence with said computer program.

53. The method of Claim 52, wherein said step of determining differences between the first sequence and the reference sequence comprises identifying polymorphisms.



54. A method for identifying a feature in a sequence selected from the group consisting of a nucleic acid code of SEQ ID NOs: 24-4100 and 8178-36681 and a polypeptide code of SEQ ID NOs: 4101-8177 comprising the steps of:

5 reading said sequence through the use of a computer program which identifies features in sequences; and identifying features in said sequence with said computer program.

55. A vector comprising a nucleic acid according to Claim 1.

10 56. A host cell containing a nucleic acid of Claim 55.

57. A method of making a nucleic acid of Claims 1 comprising the steps of: introducing said nucleic acid into a host cell such that said nucleic acid is present in multiple copies in each host cell; and  
15 isolating said nucleic acid from said host cell.

58. A method of making a nucleic acid of any one of Claims 1 comprising the step of sequentially linking together the nucleotides in said nucleic acids.

20 59. A method of making a polypeptide of any one of Claims 13 wherein said polypeptides is 150 amino acids in length or less comprising the step of sequentially linking together the amino acids in said polypeptides.

60. A method of making a polypeptide of any one of Claims 13 wherein said  
25 polypeptides is 120 amino acids in length or less comprising the step of sequentially linking together the amino acids in said polypeptides.

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